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## WILLIAM RIPLEY NICHOLS.

FORTUNATELY for the cause of science, it is seldom that the Academy has had to deplore the loss of a member at once so young and so prominent as William Ripley Nichols. Though dead at the early age of thirty-nine, he had already for some years been recognized as an authority in most branches of chemistry that relate to sanitation, — particularly in respect to his specialty, the chemistry of potable waters, — and he had likewise played a prominent part in the movement for the establishing of sound methods of scientific instruction, which was contemporaneous with his life.

Professor Nichols was born in Boston, April 30, 1847. He died at Hamburg in Germany, July 14, 1886. During boyhood he was well taught. After having passed through the Roxbury Latin School, he, together with three of his schoolmates, went to Europe in charge of the headmaster of the school, Mr. Augustus H. Buck. During an absence of nearly two years he not only travelled extensively, but, as his period of fruition proved, he must have studied also with no little assiduity. He became proficient in the use of German and French, and was subsequently repeatedly called upon to make particular use of his linguistic powers both as a teacher of these languages and as a scientific investigator.

On his return from Europe, in 1865, Mr. Nichols joined the Sophomore Class in Harvard College, but in the course of a few months he deliberately withdrew from the University and joined the school of the Massachusetts Institute of Technology, then in the second term of its existence. This movement — than which no event in the man's career more clearly marks his native strength and independence of character — was the turning point in his life. He had entered Harvard College with the purpose of devoting himself to the study of languages and to literature, having already enjoyed, as it must have seemed to him, somewhat exceptional advantages in preparation for such a course. But on finding that the knowledge already acquired would count for little or nothing for his immediate advancement, and that the rigid non-elective system of study then in vogue at Cambridge would compel him to spend much time upon subjects which seemed to have no direct connection with his intentions and purposes, he resolutely changed his plan and turned to a school of freer methods. He immediately became interested in the scientific instruction given at the Institute, and devoted himself zealously to study. From that time forth the story of his life is simply one of earnest devotion to the

advancement of science, and to the improvement of methods for teaching science.

While yet a student at the Institute, Mr. Nichols served as an assistant in the chemical laboratories and to the teacher of modern languages. At this period were published his first chemical papers, the most important of which was a study of certain oxalates. By the application of modern methods of research he was enabled to rectify in some particulars the work of earlier investigators.

Immediately after his graduation, in 1869, heavier duties were put upon him in his capacity of laboratory assistant, and he was at the same time employed by our lamented associate, Dr. George Derby, then Secretary of the Massachusetts State Board of Health, to investigate a variety of sanitary problems. In addition to these labors, Mr. Nichols did much work for the Rumford Committee of the Academy in collating matters relating to its edition of the complete works of Count Rumford, then in process of publication. He translated anew whatever of Rumford's writings had been published in German or French, and acquitted himself admirably of this by no means easy task. Mr. Nichols's services finally became so important to the committee, that he was authorized to prepare for the press the copy of the last three volumes of Rumford's works, and to take charge of the revision of the proofs. During a visit to Europe he ransacked the libraries of London, Paris, and Munich in the committee's behalf, and was rewarded by the discovery of some inedited writings of Rumford, which were published by the Academy in due course. All the work of this period, as well as that which followed, was thoroughly well done, and gave full satisfaction to every one connected with it.

As a worker, Nichols was distinguished for patience, accuracy, thoroughness, intelligence, and good judgment. Though painstaking to a degree, no trace of pedantry contaminated him. He was never slow or sluggish, and seldom seemed to be in haste. To all appearance, there was plenty of time in each day for the affairs he had to attend to, and, indeed, time to spare. Even when most heavily weighted with the burden of his own multifarious occupations, he would cheerfully read proof for his friends or revise their works; and he was accustomed methodically to answer his share of that innumerable host of letters of inquiry, which in this country pour in like locusts to consume the time and strength of every scientific man who works upon matters of general or public interest. He wrote easily, clearly, and courteously, and his thorough mastery of whatever subject he might present enforced attention and disarmed criticism.

In 1870, Mr. Nichols was appointed Professor of General Chemistry in the Massachusetts Institute of Technology, and it was in this position that the remainder of his life was passed. It is but simple truth to say that through unflagging devotion to the interests of this professorship Nichols worked himself to death. The only wonder is that he held out to work so long. From the first moment of his connection as a student with the Institute, he had clearly recognized the meaning and significance of the new educational movement to which this school gave expression, and from that time forth he labored for it without haste and without rest. Doubtless it was because he wished to see the new ideas nurtured in a virgin soil that he declined President Eliot's invitation to occupy a chemical chair at Cambridge. In the same spirit, he refused, long afterwards, to listen to the proposition that he should accept a professorship in the University of Virginia.

During many years so much of Professor Nichols's time was occupied by his duties as a teacher that his continual scientific productivity seems wellnigh incredible. Nothing but a most exceptional intelligence and an abounding store of innate strength can explain his remarkable capacity for turning off work, and account for the results of his most useful life. Taken separately, either the work he accomplished in the class-room, or the laborious investigations which were conducted in his laboratory would be quite beyond the powers of most men. He was imbued withal with a deep religious feeling, and was an active participant in the work of his church and of its Sunday school.

An acute attack of pleurisy in June, 1881, left him physically speaking a mere wreck; but his indomitable spirit seemed to burn only the more brightly through suffering. During five long years he struggled, with characteristic energy, perseverance, and good judgment, to regain his health and complete his work, but in vain.

In respect to Professor Nichols's contributions to questions of sanitation,—which at the first glance might perhaps be thought of as largely technical,—it is to be noted that they were always conceived in a thoroughly scientific spirit. No suspicion of venality, or flavor even as of affairs commercial, mercantile, or litigious, will ever be found attached to any statement of his. He was wholly free from a certain tendency to strive for triumph rather than for truth, which has sometimes been supposed to be part and parcel of an "expert's" life, and which is undoubtedly apt to mar the statements of public analysts, and to detract from the respect and esteem in which members of the profession might well be held by the community at large.

There is no room for doubting that Professor Nichols did earnestly

desire to alleviate suffering humanity, and to support to the utmost of his power wise schemes for the better ordering of those state and municipal affairs with which chemical science or art has relations; but he had no wish for mere notoriety, or for the overthrowing of adversaries, or for the forcing of crude thoughts or schemes upon an unwilling public. His purpose was simply to seek out the truth and to exhibit it. That the truth would prevail in due course, he had no doubt or fear. By those of us who knew him well, he will always be remembered, not only as an accomplished chemist, but as a loyal, devoted friend, and a thoroughly conscientious Christian man.

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## CHARLES CALLAHAN PERKINS.

CHARLES CALLAHAN PERKINS, son of James and Eliza Greene (Callahan) Perkins was born in Boston on the 1st of March, 1823. His grandfather was James Perkins, an eminent merchant, whose name will be long remembered in Boston for his munificent gifts to the Institution for the Blind and to the Boston Athenæum.

Charles Perkins's early years were spent in Boston and at boarding schools in Cambridge. He was afterwards, with his brother Edward, under the care and admirable influence of Dr. and Mrs. Charles Follen. He was finally fitted for college at Burlington, New Jersey, and entered Harvard in the autumn of 1839.

Although he had early formed a habit of reading, he was distinguished in college not so much for proficiency in his studies as for his love of drawing and music. These tastes, which were to color all his later life, had begun to manifest themselves at a very early age; and, freed by the inheritance of an easy fortune from the need of preparing himself for a professional life, he gave full play to his natural bent while at Harvard. He graduated with his class in 1843.

The opportunities for the study of any of the fine arts in America were scanty indeed in those days, and young Perkins soon after taking his degree naturally sought in Europe the examples and the instruction he longed for. He first resided in Rome, giving himself mainly to drawing and painting. Later, and after a brief visit to America, he lived in Paris, studying painting in the studio of Ary Scheffer, but at the same time giving increased attention to the study of music, which soon absorbed the greater part of his time. He had at this period already begun to form plans for the advancement of his favorite arts in America. In a letter to his sister, dated early in 1847, he wrote that he looked forward to the time when, trained and with ripened powers, he might be instrumental, with the aid of others,